

*Franklinothrips nasturtii* (Jones):

*Franklinothrips nasturtii* (Jones), Bagnall, Trans. 2d Ent. Congress (1912): 397, 1913. [New combination from *Aeolothrips*. Reassigned to *Aeolothrips*, Hood, 1915.]

#### LITERATURE

- BACK, E. A. Notes on Florida Thysanoptera, with description of a new genus. Ent. News **23**: 73-77. 1912.
- BAGNALL, R. S. A synopsis of the thysanopterous family Aeolothripidae. Trans. 2d Ent. Congress, 1912: 394-397. 1913a.
- . Notes on Aeolothripidae, with description of a new species. Journ. Econ. Biol. **8**: 154-158. 1913b.
- . On a collection of Thysanoptera from the West Indies, with descriptions of new genera and species. Journ. Linn. Soc., Zool., **32**: 495-507. 1915.
- . On a collection of Thysanoptera from St. Vincent, with descriptions of four new species. Journ. Zool. Res. **2**: 21-27. 1917.
- . The family Franklinothripidae, nov., with description of a new type of Thysanopteron. Ann. Mag. Nat. Hist. **17**: 168-173. 1926.
- . Contributions towards a knowledge of the European Thysanoptera—II. Ann. Mag. Nat. Hist. **19**: 564-575. 1927.
- . On the aeolothripid complex and the classification of the sub-order Terebrantia (Thysanoptera). Ges. Luxemburger Naturf. **25**: 115-118. 1931.
- CRAWFORD, D. L. Some Thysanoptera of Mexico and the South, I. Pomona Coll. Journ. Ent. **1**(4): 109-119. 1909.
- EBELING, W. Subtropical entomology: 747 pp. San Francisco, 1950.

- GIRAULT, A. A. New Australian animals so far overlooked by outsiders. Private publication: 2 pp. Brisbane, 1927.
- HOOD, J. D. On a collection of Thysanoptera from Panama. Psyche **20**: 119-124. 1913.
- . On some American Aeolothripidae (Thysanoptera). Ent. News **26**: 162-166. 1915.
- . Brazilian Thysanoptera, I. Rev. de Ent. **20** (1-3): 3-88. 1949.
- KELLY, R., AND MAYNE, R. J. B. The Australian thrips, a monograph of the order Thysanoptera in Australia: 81 pp. Sydney, 1934.
- MOULTON, D. Thysanoptera from Africa. Ann. Mag. Nat. Hist. **5**: 194-207. 1930.
- . The Thysanoptera of South America (1). Rev. de Ent. **2**: 451-484. 1932.
- . Thysanoptera from Africa. Ann. Mag. Nat. Hist. **17**: 493-509. 1936.
- MOZNETTE, G. F. Annotated list of the injurious and beneficial insects of the Avocado in Florida. Florida Buglist **3** (Dec. 1919): 45-48. 1920.
- PRIESNER, H. Genera Thysanopterorum. Bull. Soc. Fouad Ent. **33**: 31-157. 1949.
- REIJNE, A. A cocoon-spinning thrips. Tijdschr. Ent. **63**: 40-45. 1920.
- RICHTER, W. I. Beitrag zur Kenntnis der Aeolothripiden (Thysanoptera). Deutsch. Ent. Zeitschr. H. 1: 29-37. 1928.
- TRYBOM, F. Mitothrips, eine neue Physapoden-Gattung aus Britischen Ostafrika. Ent. Tidskr. Aig. **33** (3-4): 145-159. 1921.
- WATSON, J. R. Synopsis and catalog of the Thysanoptera of North America. Univ. Florida Agr. Exp. Stat. Tech. Bull. **168**: 1-100. 1923.
- WILLIAMS, C. B. Notes on some Trinidad thrips of economic importance. Trinidad and Tobago Bull. **17**: 143-146. 1918.
- ZANON, D. V. Nuova specie di ((Franklinothrips)) (Thysanoptera) rinvenuta a Bengasi. Atti Pontificia Acad. Sci. Nuovi Lincei **77**: 1-9 (separate). 1924.

ZOOLOGY.—A new genus and species of Limnadiidae from Venezuela (Crustacea: Conchostraca). N. T. MATTOX, College of Agriculture and Mechanic Arts, Mayagüez, Puerto Rico.<sup>1</sup> (Communicated by F. A. Chace, Jr.)

While making collections for the Venezuelan Scientific Expedition conducted by the University of Puerto Rico, one of the collectors, Jenaro Maldonado Capriles, observed many temporary rain pools which contained conchostracan phyllopods. One collection of 10 males and 11 females was made in a rock pool near Samariapo, Venezuela, on June 11, 1950. According to Mr. Maldonado, these animals were very abundant and many pools were inhabited by them, but only one collection was made. Study of these animals indicated that they are members of the family

Limnadiidae but are intergeneric in character and referable to a distinct and previously undescribed genus.

#### Metalimnadia, n. gen.

*Generic designation.*—Conchostracan phyllopods with 7 to 13 lines of growth in the adult, and a prominent anteriorly located umbo on the shell. Head without fornice; the prehensile frontal organ rudimentary and not pyriform. First antennae with two segments. Occipital notch prominent. Sixteen pairs of swimming appendages; first two pairs of male with prehensile claws; female ninth and tenth pairs with very long epipodite of exopodite for bearing eggs. Inferior, distal angle of telson with a small spine. The

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posterior 15 of the body segments bear one or more dorsal spines.

Genotype: *Metalimnadia serratura*, n. sp.

***Metalimnadia serratura*, n. sp.**

*Description.*—Male: The male shell is elongate oval with a prominent umbo at one-fifteenth of the distance from the anterior margin (Fig. 1a). The number of lines of growth varies from 11 to 13, with much crowding at the anterior end of the shell. The dorsal margin is straight except at the posterior slope of the shell; the ventral margin is regularly rounded. The size of the adult shell averages 5.88 by 3.66 mm, varying from 5.5 mm long by 3.7 mm wide to 6.0 by 3.8 mm; the greatest height is just posterior to the middle. The height-length ratio averages 1:1.54.

The head presents definite generic and specific characters (Fig. 1b). The dorsal "frontal organ" is very rudimentary, being raised only slightly as a rounded knob with a central concavity. The front of the head is deeply concave with the rostrum extending in a very pronounced hooklike beak. The first antennae are distinctive in that they have two segments, the distal one clavate. The second antennae are biramous, each branch with nine segments and each segment with a varying number of long, dorsal spines. The occipital notch is prominent. The ocellus is very pronounced.

The body bears 16 pairs of swimming appendages. The first and second pairs are modified into typical claspers. The claspers of the first pair are very broad; the fourth endite has a short knoblike lateral extension, and the two segments of the sixth endite are approximately of equal length (Fig. 1c). The claspers of the second pair are more slender; the terminal segment of the sixth endite is approximately 1.5 times longer than the first segment (Fig. 1d). The exopodites on both pairs of claspers are very short. The branchiae, as on the other appendages, are broad.

The dorsal surface of the first body segment is bare; the other segments bear 1 to 5 dorsal spines, those on the posterior segments being longer and more slender (Fig. 1e). An example of a typical spine formula is: 0-1-2-2-2-3-3-4-4-4-5-4-4-3-1-1. The telson is very truncate. The dorsal ridges of the telson are regularly serrated with an average number of 12 evenly spaced and pronounced sawtoothlike spines; a biramous filamentous spine arises between the third and

fourth dorsal spines. The pair of ventral, posterior, movable spines have bristlelike spines on the proximal portion with microspines on the sharply attenuated terminal portion. On the inferior distal margin of the telson is a small spine.

Female: The female shell is similar to, but smaller than, that of the male. It is more ventricose and more rounded on the dorsal margin than in the male (Fig. 1f). The umbo is less pronounced and there is a median, shallow indentation on the ventral margin. The usual number of growth lines is 10, with a variation from 7 to 10. In size the female shell averages 4.94 mm long by 3.39 mm in height. The variation in the 11 females is from 4.5 mm by 3.0 mm to 5.4 by 3.5 mm. The height-length ratio is 1:1.45.

The head of the female is smaller and less elongate, but similar to that of the male. The front is deeply concave, the rostrum beaklike. The ocellus is very pronounced, the frontal organ very rudimentary, and the first antennae 2-segmented (Fig. 1h).

The 16 pairs of trunk appendages are swimming legs typical of the group. The first pair have well marked endites; the sixth endite extends about to the end of the fifth endite (Fig. 1i). The branchiae, as in the male, are very broad. The ninth and tenth pairs of legs possess a greatly extended basal exopodite flabellum for the attachment and carrying of eggs; this flabellum is twice as long as the length of the rest of the appendage (Fig. 1j). The eggs are spherical, with rough surface, and average 0.3 mm in diameter (Fig. 1g). The dorsal ridges of the trunk segments are variously spined as in the male, and the telson is similar to that of the male.

*Type locality.*—Samariapo, Territorio Amazonas, Venezuela.

*Types.*—Holotype, male, U.S.N.M. no. 92292, and paratypes, both sexes, U.S.N.M. no. 92293, in the U. S. National Museum and in the writer's collection.

*Remarks.*—*Metalimnadia serratura* differs from other members of the family Limnadiidae in so many characters as to nearly warrant a subfamily or separate family designation. However, the general form of the body, number of trunk appendages, form of the telson, and the first two pairs of male claspers, find closer resemblance in the Limnadiidae than in any of the other conchostracan families. Many of the other morphological characters, however, are very different from those of other Limnadiidae.

The shell of *M. serratura* is more estheriidlike than it is like the shells of the other Limnadiidae. No member of the genus *Eulimnadia* has as many

growth lines or an umbo as well developed. In *Limnadia*, only the male of *L. stanleyana* King from Australia has a shell with a well-pronounced

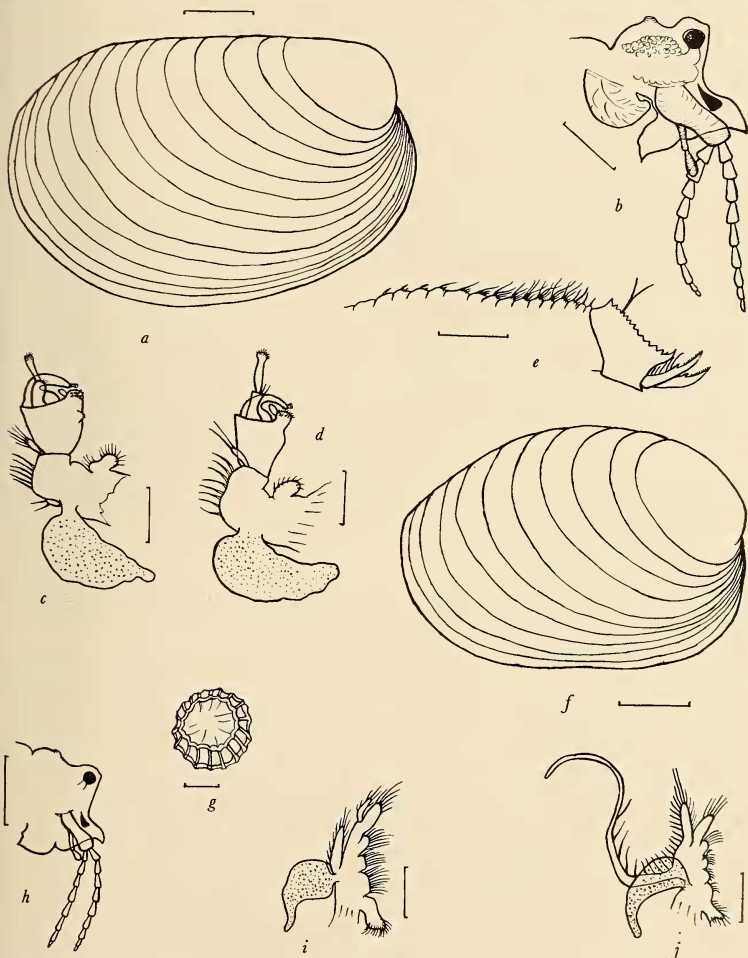


FIG. 1.—*Metalimnadia serratura*, n. gen., n. sp. a-e, male: a, Lateral view of shell; b, lateral view of head; c, first pair of claspers; d, second pair of claspers; e, lateral view of trunk and telson. f-j, female: f, Lateral view of shell; g, an egg; h, lateral view of head; i, a first trunk appendage; j, tenth trunk appendage. Scales a, b, e, f, h equal 1 mm; e, d, i, j equal 0.5 mm; g equals 0.1 mm.

umbo and as many lines of growth. The female of this latter species has a very different shell. All species of *Limnadiopsis*, the other genus of the family, are unique in having a very noticeably serrated dorsal shell margin.

The head characters of *M. serratura* are very different from those of the other members of the family, although the general form of the head is similar to that of the other genera. As indicated by Daday (1915, 1925) the Limnadiidae are characterized by a prominent, pyriform frontal appendage. This frontal organ in *M. serratura* is very rudimentary, not pyriform, and it is raised only slightly above the dorsal surface of the head. What may be the evolutionary status of this very characteristic limnadiid feature among the different genera cannot be indicated at this time. The first antennae of all the other members of the family are elongate, unsegmented appendages with a series of dorsally located sensory papillae. The 2-segmented first antennae of *M. serratura* are more like those of the Lynceidae than any other of the Conchostraca. These appendages are strongly diagnostic for the present genus and species.

**HELMINTHOLOGY.**—*Some cestodes from Oregon shrews, with descriptions of four new species of Hymenolepis Weinland, 1858.* BETTY LOCKER, Reed College, Portland, Ore., and ROBERT RAUSCH, Arctic Health Research Center, Anchorage, Alaska.

A large number of shrews of the genus *Sorex* has been examined in connection with the investigation of the helminth parasites of Oregon mammals. It is the purpose of this paper to give a preliminary list of the cestodes obtained from these shrews, together with the description of new species. More complete information on these and other helminths will be published by one of us (B. L.) at a later date.

The helminths reported here have been collected from *Sorex v. vagrans* Baird, the most common shrew of western Oregon during the time these collections were made. Host determinations were made by comparing our material with specimens in the mammal collections of the U. S. National Museum.

In addition to the species herein described, we have also recorded three previously described cestodes from Oregon shrews. These observations appear to be the first to be

As pointed out by Linder (1945) many species of *Limnadia* have only 16 pairs of trunk appendages, as does *M. serratura*. Other members of the family may have up to 32 pairs. The first two pairs of male claspers are characteristic, but, as on the other trunk appendages, the branchiae are much larger and proportionately wider than in the other genera. The egg-bearing exopodite of the ninth and tenth female appendages is proportionately much longer than typically found in the Limnadiidae. The telson, with the inferior distal spine, is more like that of *Eulimnadia*, than that of the other genera.

It seems as if this species, *Metalimnadia serratura*, represents a newly found intergeneric line of evolution in the family Limnadiidae.

#### LITERATURE CITED

- DADAY DE DEES, E. *Monographie systématique des phyllopo des conchostracés.* Ann. Sci. Nat., Zool., ser. 9, 20: 39-192. 1915. *Ibid.*, ser. 10, 8: 143-184. 1925.
- LINDER, FOLKE. *Affinities within the Branchiopoda, with notes on some dubious fossils.* Ark. für Zool. 37(4): 1-28. 1945.

made on cestodes in shrews from the Pacific coast region. Each species is considered separately below.

#### *Protogynella blarinae* Jones, 1943

This minute cestode of uncertain status was found to occur commonly in Oregon shrews. The Oregon specimens were not considered in detail, since another worker has already undertaken the restudy of the species; however, as far as was determined these cestodes were morphologically identical with those found in shrews (*Sorex c. cinereus* Kerr; *Blarina brevicauda* Say) in the eastern States. It was noted, however, that the Oregon specimens had a much larger number of hooks than was reported from Wisconsin shrews (Rausch and Kuns, 1950). Because of the minute size and proximity of these rostellar hooks, an accurate count was impossible; however, the number is near one hundred. Whether or not this represents only variation can be determined on the basis of the study of specimens from different geographical locations.